ADDITIONAL NOTES ON THE GENUS CHASCANUM. VI

Harold N. Moldenke

CHASCANUM E. Mey.

Additional & emended bibliography: Xavier Louis & Monod, Bull. Agence Gén. Colon. Autonom. 27: 605 & 626. 1934; J. Mukherjee, Trans. Bose Res. Inst. 35: 37—42, pl. 2. 1972; Moldenke, Phytologia 30: 199—208, 506, & 509. 1975.

Mukherjee (1972) says "The genus Bouchea of Schauer have [sic] been divided Into three distinct genera, Chascanum, Svensonia and Bouchea on the basis of gross morphological characters. The habit, range of phytogeographical distribution, etc., also confirm the division. Pollen morphology, also is in accord with this division. The pollen grains of Bouchea are 3-pororate while the pollen of [the] others are 3-colpate. Differential surface patterns of 3-colpate pollen justify their individual generic status, e.g. pollen of Chascanum is negatively reticulate while those of Svensonia are finely punctitegillate, tectum beset with supratectal processes."

It should be noted here that the Endlicher (1838) reference in the bibliography of this genus is often cited as "1836-1856", but the page involved with this genus was actually issued in 1838.

CHASCANUM ADENOSTACHYUM (Schau.) Moldenke

Additional bibliography: J. Mukherjee, Trans. Bose Res. Inst. 35: 41. 1972; Moldenke, Phytologia 30: 201, 204, & 205. 1975.

CHASCANUM CERNUUM (L.) E. Mey.

Additional synonymy: Chascanum cernua Mukherjee, Trans. Bose Res. Inst. 35: 39, sphalm. 1972.

Additional bibliography: J. Mukherjee, Trans. Bose Res. Inst. 35: 38—41, fig. 2. 1972; Moldenke, Phytologia 30: 202. 1975.

Additional illustrations: J. Mukherjee, Trans. Bose Res. Inst. 35: 39, fig. 2. 1972.

Mukherjee (1972) describes the pollen-grains of this species, on the basis of Bolus s.n. [Collibus circa Fish Hock in Peninsula Capens; Sept. 1882] in the Central National Herbarium at Calcutta, as "3-colpate, colpa short (brevicolpate), slit-like, about 36.5 mu x 0.6 mu (range 27.5 mu — 57.5 mu x 0.5 mu — 1.0 mu), sometimes provided with margo. The colpi have short channels at lateral sides, at right or at left or on both sides, the ends are generally bifurcated. Mean intercolpial distance ± 39.0 mu. Subprolate to spheroidal, P/E about 95.0 mu x 90.0 mu (range 78.0 mu — 126.0 mu x 78.0 mu — 120.0 mu). Exine ± 6.0 mu thick. Sexine ± 5.5 mu thick, negatively reticulate, reticulation larger toward the poles, gradually smaller towards the centre, often reticuloid. The luminoid (?) space is like that of an island surrounded by channels, the island being formed by mass of bacula closely aggre-

gated together having pointed tips. Such tips in first focus appear like bright spots which ultimately become dark mass in second focus. Bacula simple or sometimes apically branched. Nexine ± 0.5 mu thick. NPC classification 343."

CHASCANUM DEHISCENS (L. f.) Moldenke

Additional bibliography: J. Mukherjee, Trans. Bose Res. Inst. 35: 38, 40, & 41, pl. 2, fig. 9--14. 1972; Moldenke, Phytologia 30: 202--203. 1975.

Additional illustrations: J. Mukherjee, Trans. Bose Res. Inst. 35: pl. 2, fig. 9--14. 1972.

Mukherjee (1972) describes the pollen-grains of this species, on the basis of Franks s.n. [Camperdown; March 5, 1910] in the Central National Herbarium at Calcutta, as "more or less the same as that of C. cernua, colpi about 26.0 mu x 0.5 mu (range 20.5 mu — 33.5 mu x 0.5 mu). Mean intercolpial distance ± 49.0 mu. Subprolate to spheroidal, P/E about 80.5 mu x 77.0 mu (range 72.0 mu — 90.0 mu x 68.5 mu — 85.0 mu). Exine ±4.5 mu, sexine ± 4.0 mu and nexine ± 0.5 mu thick."

CHASCANUM GARIPENSE E. Mey.

Additional bibliography: J. Mukherjee, Trans. Bose Res. Inst. 35: 41. 1972; Moldenke, Phytologia 30: 202--204. 1975.

CHASCANUM HEDERACEUM (Sond.) Moldenke

Additional bibliography: J. Mukherjee, Trans. Bose Res. Inst. 35: 41. 1972; Moldenke, Phytologia 30: 205--206. 1975.

CHASCANUM INCISUM (H. H. W. Pearson) Moldenke

Additional bibliography: J. Mukherjee, Trans. Bose Res. Inst. 35: 41. 1972; Moldenke, Phytologia 30: 208. 1975.

CHASCANUM INSULARE var. TRIANGULARE Moldenke

Additional bibliography: Moldenke, Phytologia 7: 371. 1961; Moldenke, Fifth Summ. 1: 259 (1971) and 2: 857. 1971.

Additional citations: MADAGASCAR: Humbert & Swingle 5493 (Ca--925930--isotype).

CHASCANUM INTEGRIFOLIUM (H. H. W. Pearson) Moldenke

Additional bibliography: Fedde & Schust. in Just, Bot. Jahresber. 60 (2): 571. 1941; Moldenke, Phytologia 7: 371. 1961; Moldenke, Fifth Summ. 1: 255 & 400 (1971) and 2: 857. 1971.

CHASCANUM KROOKII (Gürke) Moldenke

Additional bibliography: Fedde & Schust. in Just, Bot. Jahresber. 60 (2): 571. 1941; Moldenke, Phytologia 7: 371. 1961; Moldenke, Fifth Summ. 1: 255 & 400 (1971) and 2: 857. 1971.

CHASCANUM LATIFOLIUM (Harv.) Moldenke

Additional & emended bibliography: Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 327. 1893; Thiselt.-Dyer, Fl. Cap. 5 (1):

727. 1912; Fedde & Schust. in Just, Bot. Jahresber. 60 (2): 571. 1941; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 1: 327 (1946) and imp. 3, 1: 327. 1960; Moldenke, Phytologia 7: 371—372. 1961; R. H. Compton, Journ. S. Afr. Bot. Suppl. 6: 65 & 157. 1966; Moldenke, Fifth Summ. 1: 254, 255, & 400 (1971) and 2: 857. 1971.

Compton (1966) comments that this species is "handsome", while in his opinion other species of the genus, like C. hederaceum and and C. schlechteri, are "weedy".

CHASCANUM LATIFOLIUM var. GLABRESCENS (H. H. W. Pearson) Moldenke

Additional bibliography: Thiselt.-Dyer, Fl. Cap. 5 (1): 727. 1912; J. Hutchinson, Botanist in South. Afr. 361. 1946; Moldenke, Phytologia 7: 371—372. 1961; R. H. Compton, Journ. S. Afr. Bot. Suppl. 6: 65. 1966; Moldenke, Fifth Summ. 1: 254, 255, & 400 (1971) and 2: 857. 1971.

Compton (1966) found this plant growing on upland grassveld in Swaziland and describes it as "handsome". Hutchinson (1946) cites his no. 2447.

CHASCANUM LATIFOLIUM var. TRANSVAALENSE Moldenke

Additional bibliography: Moldenke, Phytologia 7: 372. 1961; Moldenke, Fifth Summ. 1: 255 (1971) and 2: 857. 1971.

CHASCANUM LIGNOSUM (Dinter) Moldenke

Additional bibliography: A. W. Hill, Ind. Kew. Suppl. 8: 31. 1933; Hill & Salisb., Ind. Kew. Suppl. 10: 49. 1947; Moldenke, Phytologia 7: 372. 1961; Friedrich-Holshammer, Meeuse, & Meikle, Prodr. Fl. Südw. Afr. 13 (122): 3. 1967; Moldenke, Fifth Summ. 1: 253, 255, & 400 (1971) and 2: 857. 1971.

Friedrich-Holzhammer and his associates (1967) reduce this species to synonymy under C. pumilum E. Mey.

CHASCANUM MARRUBIIFOLIUM Fenzl

Additional & emended synonymy: Bouchea marrubiifolia Schau. apud Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 327. 1893. Chascanum marrubifolium Fenzl ex Moldenke, Prelim. Alph. List Invalid Names 15, in syn. 1940; M. A. Rau, Bull. Bot. Surv. India 10, Suppl. 2: 62. 1969. Chascanum marrubiifolium "Fenzl ex Walp." apud J. B. Gillett, Kew Bull. 1955: 133. 1955. Lafuenta ovalis Batt. ex Humbert, Fl. Sahara Sept. & Cent. 407, in syn. 1958; Bavazzano, Webbia 26: 319. 1972. Bouchea marubiifolia [Schau.] apud Legris, Trav. Sect. Scient. Inst. Franç. Pond. 6: 535 & 558. 1963. Lafuentea ovalifolia Batt. ex Quezel & Santa, Nouv. Fl. Alg. 2: 781, in syn. 1963. Bouchea marrubifolia Schau. apud Puri, Jain, Mukerjee, Sarup, & Kotwal, Rec. Bot. Surv. India 19: 107. 1964. Chascanum marrubifolium "Fenzl ex Walp." apud M. A. Rau, Bull. Bot. Surv. India 10, Suppl. 2: 62. 1969; V. Singh, Journ. Bomb. Nat. Hist. Soc. 68: 343. 1971.

Additional & emended bibliography: Aschers. in G. Schweinf., Beitr. Fl. Aethiop. 1: 118 & 278. 1867; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 327 & 507. 1893; J. G. Baker in

Thiselt.-Dyer, Fl. Trop. Afr. 5: 282. 1900; Cooke, Fl. Presid. Bombay, ed. 1, 3: 420—421. 1905; M. Kunz, Anatom. Untersuch. Verb. 40. 1911; Grenz., Ann. Mo. Bot. Gard. 13: 71. 1926; Xavier Louis & Monod, Bull. Agence Gén. Colon. Autonom. 27: 605 & 626. 1934; Erdtman, Svensk. Bot. Tidsk. 39: 281--283, fig. 3. 1945; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 1: 327 & 507. 1946; Glover, Prov. Check List Brit. & Ital. Somal. 266. 1947; Hill & Salisb., Ind. Kew. Suppl. 10: 49 & 99. 1947; Erdtman, Pollen Morph. & Pl. Tax., ed. 1, 448. 1952; J. B. Gillett, Kew Bull. 1955: 131 & 133. 1955; Anon., U. S. Dept. Agr. Bot. Subj. Index 15: 14354. 1958; Cooke, Fl. Presid. Bombay, ed. 2, imp. 1, 2: 500. 1958; Humbert, Fl. Sahara Sept. & Cent. 407. 1958; Anon., Kew Bull. Gen. Index 1929-1956, 47 & 72. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 1: 327 & 507. 1960; Puri, Indian Forest Ecol. 264. 1960; Moldenke, Phytologia 7: 372—373. 1961; Cuf., Bull. Jard. Bot. Brux. 32: Suppl. 793. 1962; Nair & Rehman, Bull. Nat. Bot. Gard. Lucknow 76: 10, pl. 2, fig. 7, & text-fig. 17. 1962; Hepper in Hutchinson & Dalz., Fl. W. Trop. Afr., ed. 2, 437—438. 1963; Legris, Trav. Sect. Scient. Inst. Franç. Pond. 6: 395, 535, & 558. 1963; Maheswari, Fl. Delhi 279. 1963; Quezel & Santa, Nouv. Fl. Alg. 2: 779 & 781. 1963; Puri, Jain, Mukerjee, Sarup, & Kotwal, Rec. Bot. Surv. India 19: 107. 1964; Erdtman, Pollen Morph. & Pl. Tax., ed. 2, 448. 1966; Jafri, Fl. Karachi 287 & 352, fig. 282. 1966; Maheshwari, Illustr. Fl. Delhi 172, fig. 172. 1966; Cooke, Fl. Presid. Bombay, ed. 2, imp. 2, 2: 500. 1967; Moldenke, Résumé Suppl. 15: 16 (1967), 16: 9, 16, & 19 (1968), and 17: 8. 1968; Quezel, Fl. & Veg. Plat. Darfur [Doss. 5 Recherch. Coop. Prog. 45:] 131. 1969; M. A. Rau, Bull. Bot. Surv. India 10, Suppl. 2: 62. 1969; Erdtman, Pollen Morph. & Pl. Tax., ed. 3, 448. 1971; Moldenke, Fifth Summ. 1: 208—212, 226, 240, 264, 265, 267, 272, 356, 400, 424, & 425 (1971) and 2: 520, 534, 604, 629, & 858. 1971; V. Singh, Journ. Bomb. Nat. Hist. Soc. 68: 343. 1971; Bavazzano, Webbia 26 [Erb. Trop. Firenz. Publ. 21]: 319 & 356. 1972; Lebrun in Hepper, Kew Bull. 26: 568. 1972; Letouzey, Man. Bot. Forest. Afr. Trop. 2 (B): 360. 1972; J. Mukherjee, Trans. Bose Res. Inst. 35: 38 & 40—42, pl. 2, fig. 15. 1972; T. R. Stewart, Annot. Cat. in Nasir & Ali, Fl. W. Pakist. 605. 1972; Moldenke, Phytologia 25: 236 & 240 (1973), 28: 442 (1974), 29: 41 & 42 (1974), and 30: 202. 1975.

Additional illustrations: Erdtman, Svensk. Bot. Tidsk. 39: 282, fig. 3. 1945; Jafri, Fl. Karachi fig. 282. 1966; Maheshwari, Illustr. Fl. Delhi fig. 172. 1966; J. Mukherjee, Trans. Bose Res. Inst. 35: pl. 2, fig. 15. 1972.

Recent collectors describe this plant as a much-branched "woody herb", 25--30 cm. tall, with suborbicular strongly-veined leaves and sessile flowers borne in elongate spikes to 20 cm. long, closely appressed to the rachis. Bavazzano (1972) says "plante herbacée, s/arbrisseau, feuilles rondes, dentelées, épis allongé", while Humbert refers to it as having "tiges couchées puis redresse esportant de larges feuilles dentées tout autour et des épis de fleurs terminaux." The corollas are described by Maheshwari (1966) as "dirty-white or cream-coloured", but on Jafri 1500 they are said to have

been "pale-yellowish", on Hussain s.n. "yellow", on Qaiser, Ghafoor, & Abrar Hussain 4141 "yellowish-white", and on Abedin 5234 as "white".

Collectors have found this plant growing on stony ground, in stony riverbeds, and in "rocailles désertiques", at altitudes of 156—800 meters. Maheshwari (1963) asserts that it flowers and fruits from August to December; other collectors have found it in anthesis in February and April.

Xavier Louis & Monod (1934) record the vernacular name, "khachim al-'amma", and note that the plant is "Non comestible, mangé par tous les animaux; les chameaux le mangent vert et sec".

Erdtmann (1966) has examined the pollen of Kotschy 32 from the Sudan and describes the grains as 3-colporate, subprolate, and 63 x 53 mu in dimensions. Nair & Rehman (1962) describe them as "3-zonicolporate, prolate spheroidal (59 x 57 μ; range 56—60 x 53—60 μ). Ectocolpium narrow and of the same width along the whole length, ends pointed, margin incrassate. Endocolpium faint (lalongate, rectangular). Exine 2 μ thick. Ectine almost as thick as endine, granulate, granules being of various sizes and shapes."

Mukherjee (1972) describes the pollen-grains, on the basis of Dhurna s.n. [Cutch, Sept. 9, 1952] in the Central National Herbarium at Calcutta, as "3-colpate, colpi about 33.0 mu x 2.0 mu (range 29.0 mu — 37.0 mu x 1.5 mu — 3.0 mu), with thick cristate margin, broken at some places. Mean intercolpial distance ± 9.5 mu. Amb convex. Mean apocolpium diam. ± 10.0 mu. Prolate, P/E about 41.0 mu x 27.0 mu (range 37.5 mu — 45.0 mu x 24.0 mu — 30.0 mu). Exine ± 3.0 mu thick. Sexine ± 2.0 mu thick, pertectate, supratectal spimules present. Tectum thick. Bacula densely spaced and support tectum. Nexine ± 1.0 mu thick. NPC classification 343."

Stewart (1972) records the species from Karachi and Sind; Humbert (1958) from "Adrar des Ifoghas, Tibesti". Letouzey (1972) reports it from "des regions semi-désertiques, en touffe recouverte de poils blancs, avec de longs épis de fleurs blanches". Puri (1960) says of it: "common throughout rock communities" in the desert Barmer Hills of Rajasthan which are chiefly volcanic with a fringe of sandstone at their base.

Jafri (1966) cites Jafri 816 & 1500 from Karachi, Pakistan, and says that the species is "common" there. My wife and I, however, did not see any on our recent visit there. He gives its overall distribution as "West Pakistan, Arabia, Abyssinia, Egypt, and Tropical Africa". Bavazzano (1972) cites Chedeville 678, 1115, 1398, 1461, & 1653 from Afars & Issis; Cooke (1905) cites Bhloa Puran s.n., Cooke s.n., Dalzell s.n., and Stocks 498 & s.n. from Sind. Puri and his associates (1964) cite Blatter & Hall s.n., Jain 40026, Puri 23997, Ratnam s.n., and Sarup s.n.; Maheshwari (1963) cites his nos. 1216 & 1241, while Hepper (1963) cites Jumelle s.n. from Mauritania, Buchanan s.n. from Guinea, Hagerup 345 from Mali, and DeWire N2-96, Gillet 1057 & 1066, and Petit-Lagrange 60 & 66 from Niger. Baker (1900) cites Kotschy 32, Lord

12, Pfund 172 & 850, and Schweinfurth 451 & 466 from what he calls the "Nile Land". Quezel (1969) asserts that in the Darfur part of the Sudan he "observé uniquement dans la zone septentrionale aux environs de Musbat et Umm Burru", growing in "rocailles".

This plant bears striking superficial similarity to Svensonia laeta (Fenzl) Moldenke, a plant of almost identical habitat and similar range. Chascanum marrubiifolium, however, has its fruiting-calyx gibbous-inflated and the cocci not winged, less than twice as long as wide, deeply excavated at the base or on the ventral surface (often to one-half the length), the excavation covered by a membranous scale-like gynophore. Svensonia laeta, on the other hand, has its fruiting-calyx splitting from the base to the apex on maturity and the cocci winged from their base to the apex, 3 or more times as long as wide, excavated only at the very base, and the gynophore obsolete.

Material of C. marrubiifolium has been misidentified and distributed in some herbaria as Svensonia laeta, Nepeta biloba, and even Acanthaceae. On the other hand, the Rehana s.n. [1963], distributed as Chascanum marrubiifolium, is actually Stachytarpheta cayennensis (L. C. Rich.) Vahl.

Additional citations: SUDAN: Khartoum: Kassas 530 (Gz), 616 (Gz, Gz). Kordofan: Kassas 98 (Gz); Pfund s.n. (Gz, Gz). Red Sea: Kassas, Mobarak, & Omar 66 (Gz). KENYA: Gillett & Newbould 19186 (Gz). ARABIA: Aden: Deflers 49 (W—2496728). PAKISTAN: Sind: Abida Shamim s.n. [21.2.1964] (Kh); Aftab Ahmad Yusufi s.n. [16.2.1964] (Kh); Aisha s.n. [1962] (Kh); Anwar s.n. [1962] (Kh); Asif Mohammad Khan s.n. [8.5.65] (Kh); Bilgrami s.n. [2.1.1964] (Kh); Collector undetermined s.n. [9-7-1956] (Kh); Faheemuddin s.n. [15.2.1963] (Kh); Firdaus s.n. [1963] (Kh); Hamidi s.n. [12-7-1967] (Kh); Jafri 1500 (Kh); Kheri 90 (Kh); Khurshid Anwar s.n. [27.5.1956] (Kh); Mahmood ul Hasan Shah s.n. [3.1.1964] (Kh); Marghoob Asgher Kadri s.n. [15.9.1962] (Kh); Murtaza s.n. [5.10. 62] (Kh); Nusrat Farida s.n. [6.10.1962] (Kh); Qaiser, Ghafoor, & Abrar Hussain 4142 (Kh); Quayoom s.n. [1962] (Kh); Rizvi s.n. [7. 3.1961] (Kh); Sabiha Nargis s.n. [1963] (Kh); Saeed Haider s.n. [16.3.1960] (Kh); Seerat Ara s.n. (Kh); Sultan ul Talat s.n. [Oct. 1956] (Kh); Yasin Ahmed s.n. [10.11.1963] (Kh). CULTIVATED: Pakistan: Husain s.n. [Karachi University campus, 2.2.68] (N).

CHASCANUM NAMAQUANUM (H. Bolus) Moldenke

Additional & emended bibliography: H. H. W. Pearson in Thiselt.-Dyer, Fl. Cap. 5 (1): 204—205. 1901; Thiselt.-Dyer, Fl. Cap. 5 (1): 727. 1912; Fedde & Schust. in Just, Bot. Jahresber. 60 (2): 571. 1941; Moldenke, Phytologia 7: 373. 1961; Moldenke, Fifth Summ. 1: 255 & 400 (1971) and 2: 858. 1971.

[to be continued]